Closing the Gaps in Genitourinary Syndrome of Menopause Care: Evidence, Guidance, and Practice

Executive Summary

Genitourinary syndrome of menopause (GSM) is a chronic, progressive condition affecting an estimated 40–60% of perimenopausal and postmenopausal women, yet it remains consistently underdiagnosed and undertreated. In late 2025, two landmark developments realigned authoritative guidance and federal labeling with the underlying evidence. The AUA/SUFU/AUGS clinical practice guideline and the FDA's November 2025 removal of the boxed warning from menopausal hormone therapy products together created both the opportunity and the imperative to update clinician knowledge and practice. Despite this shift, clinicians demonstrate persistent, mutually reinforcing gaps across the full clinical pathway: recognition, treatment knowledge, safety counseling, and individualized prescribing. This needs assessment supports a CME activity that mirrors the clinical reasoning sequence, equipping clinicians to recognize, counsel on, and individualize evidence-based, guideline-concordant GSM care to improve symptom control and quality of life.

Introduction

Genitourinary syndrome of menopause (GSM) is the term adopted in 2014 by the International Society for the Study of Women's Sexual Health and the North American Menopause Society to describe the constellation of genital, sexual, and urinary symptoms resulting from declining estrogen and androgen concentrations during the menopausal transition.[1] GSM is a chronic, progressive condition that affects a substantial proportion of perimenopausal and postmenopausal women and is associated with significant impairment in sexual function and quality of life.[2,3] Despite its clinical significance, GSM remains consistently underdiagnosed and undertreated.[2]

The clinical landscape for GSM shifted decisively in late 2025, driven by two landmark developments that together realigned authoritative guidance with the underlying evidence. First, the American Urological Association (AUA), in partnership with the Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction (SUFU) and the American Urogynecologic Society (AUGS), published the first multi-society clinical practice guideline addressing the identification, diagnosis, counseling, and treatment of GSM.[4] Informed by a systematic review of hormonal and nonhormonal treatment options across dozens of randomized controlled trials, the guideline concluded that treatment selection should be individualized through shared decision-making rather than following a stepwise hierarchy. It also affirmed the favorable safety profile of local low-dose vaginal estrogen, including in women with a history of breast cancer.[4]

Shortly thereafter, in November 2025, the US Food and Drug Administration requested the removal of the boxed-warning language regarding cardiovascular disease, breast

cancer, and probable dementia from menopausal hormone therapy products.[5] This warning, originally extrapolated from systemic hormone therapy data,[6] had for years discouraged the appropriate use of local therapies despite evidence that they carry a distinct, more favorable risk profile.[7–9] Together, these two developments mark an inflection point for GSM care: authoritative guidance and federal labeling now align with the evidence, creating both the opportunity and the imperative to update clinician knowledge and practice.

This educational program seeks to address these gaps by equipping clinicians with diagnostic and treatment knowledge, procedural knowledge to counsel patients on therapy-specific risk-benefit profiles, and the applied competence to individualize hormonal therapy in clinical practice.

Educational Gaps

Gap #1	Educational Need	Learning Objective
Clinicians demonstrate insufficient knowledge of GSM, including its symptoms and signs, contributing to underdiagnosis and undertreatment in perimenopausal and menopausal women.	There is a need to increase clinician knowledge of the symptoms and signs of GSM, assessed through a focused genitourinary history and physical examination, to improve timely recognition and reduce underdiagnosis.	At the conclusion of this activity, participants should be able to **identify the signs and symptoms** of GSM in perimenopausal and menopausal women.

GSM is highly prevalent yet substantially underrecognized in clinical practice. Depending on the population and assessment method, studies suggest that 40-60% of women report GSM symptoms.[10] In a multicenter observational study of 913 postmenopausal women presenting for routine gynecologic examination, 79.1% met criteria for GSM on objective evaluation, yet only 30% had a prior diagnosis, meaning the majority of affected women were identified only at the time of structured assessment.[11] The disconnect is compounded on the patient side: only 4% of women attributed their vulvovaginal symptoms to GSM,[12] and fewer than 25% of affected women sought consultation with a clinician.[13]

GSM is a clinical diagnosis established through a focused genitourinary history and physical examination. Symptoms cluster in three domains: genital symptoms of dryness, burning, irritation, and itching; sexual symptoms of decreased lubrication, dyspareunia, post-coital bleeding, and impaired arousal or desire; and urinary symptoms of urgency, frequency, nocturia, and dysuria. There is symptom overlap with conditions such as overactive bladder and recurrent UTI. On genitourinary examination, characteristic findings include loss of vaginal rugae, vaginal pallor or erythema, decreased moisture and elasticity, tissue fragility with fissures or petechiae, introital stenosis or retraction,

and thinning of the labia and pubic hair. Lower urinary tract signs include prominence of the urethral meatus, urethral caruncle, and urethral prolapse. Because women may present with some or all of these features and symptoms/signs may be explained by another diagnosis, clinicians need a working command of the full symptom and sign profile to recognize GSM reliably and distinguish it from co-occurring conditions.[1] Because patients often do not volunteer these symptoms, whether from embarrassment or the assumption that they are a normal part of aging,[14,15] accurate recognition depends heavily on clinicians proactively eliciting symptoms and identifying characteristic physical signs.

Survey data indicate that the knowledge needed to close this gap is inconsistently developed during training. In a national survey of US obstetrics and gynecology residency program directors, fewer than one-third (31.3%) reported having a dedicated menopause curriculum. However, 92.9% agreed that residents should have access to a standardized menopause curriculum, and 83 of 99 respondents indicated that their programs needed more menopause educational resources.[16] In a cross-specialty survey of family medicine, internal medicine, and obstetrics and gynecology residents, 93.8% considered menopause management training important, yet meaningful knowledge gaps persisted, and residents reported minimal formal menopause curriculum. 20.3% reported not receiving any menopause lectures during residency. Only 6.8% of residents reported feeling adequately prepared to manage women experiencing menopause.[17]

Because GSM-relevant education is variable even within specialty training, these knowledge gaps are likely to persist into independent practice across the range of clinicians who care for menopausal women, reinforcing the need to strengthen clinician recognition of GSM signs and symptoms as the entry point to appropriate evaluation and treatment.

Gap #2	Educational Need	Learning Objective
Many clinicians lack adequate knowledge of the full spectrum of treatment options available for GSM, including nonhormonal and hormonal therapies.	There is a need to increase clinician knowledge of the nonhormonal and hormonal treatment options available for GSM and role in individualized, preference-based treatment selection.	At the conclusion of this activity, participants should be able to **describe the nonhormonal and hormonal treatment options** available for GSM and their evidence for use.

Effective management of GSM requires familiarity with a range of treatments, including nonhormonal options (vaginal moisturizers and lubricants) and hormonal therapies, such as local low-dose vaginal estrogen, vaginal DHEA (prasterone), and oral ospemifene. Each of these options has demonstrated benefit for GSM symptoms.[8,18–29]

Among nonhormonal therapies, vaginal moisturizers and lubricants improve vaginal dryness and dyspareunia and can be used alone or alongside hormonal therapy. Among hormonal therapies, local low-dose vaginal estrogen improves vaginal dryness,[8,18–23] dyspareunia,[18–23] dysuria,[18,24] and vulvovaginal discomfort,[8,18,19,21] and reduces the risk of recurrent urinary tract infections.[30–35] Vaginal DHEA improves vulvovaginal dryness and dyspareunia.[25–27,36] Oral ospemifene improves vulvovaginal dryness and dyspareunia.[37] Because evidence is insufficient to establish the superiority of one hormonal therapy over another, selection should be individualized through shared decision-making rather than following a fixed hierarchy. Importantly, the guideline also notes that the greatest amount of evidence and clinical experience exists for local low-dose vaginal estrogen. Translating this breadth of options into practice requires that clinicians be able to describe the available therapies and the evidence supporting their use.[4]

Quantitative data indicate that knowledge of therapeutic options is often inadequate and that effective therapies are markedly underused. In the Women's EMPOWER survey of 1,858 symptomatic postmenopausal women, only 7% were currently using prescription GSM therapies (local estrogen or oral selective estrogen receptor modulators), despite the condition's high prevalence and treatability. The survey identified a persistent disconnect in education and communication between healthcare professionals and patients as a central driver of undertreatment.[38] A companion analysis found that women's awareness of available treatment options remained inadequate despite direct-to-consumer marketing and educational efforts, underscoring that patient-facing campaigns alone are insufficient and that clinicians must be equipped to introduce and explain the full range of options.[15] Because women increasingly turn to online and social media sources for menopause information, yet still look to their clinicians as the authority on treatment selection,[39] clinician knowledge becomes the rate-limiting step: when clinicians are unfamiliar with available therapies, eligible patients are left unaware of effective options or reliant on guidance of variable quality.

Gap #3	Educational Need	Learning Objective
Many clinicians lack the procedural knowledge needed to apply the risk-benefit and safety profiles of hormonal therapies for GSM when counseling and making treatment decisions, frequently conflating the safety profile of local hormonal therapies with that of systemic estrogen, including women	There is a need for clinicians to understand how to counsel patients on the risk-benefit and safety profiles of local hormonal therapies for GSM relative to systemic estrogen, including women with a history of breast cancer, to support informed, shared treatment decisions and reduce inappropriate treatment avoidance.	At the conclusion of this activity, participants should be able to **apply the risk-benefit and safety profiles of hormonal therapies for GSM,** relative to systemic estrogen, when counseling patients**,** including those with a history of breast cancer.

with a history of breast cancer.		

Beyond knowing that hormonal therapies exist, clinicians must be able to apply each therapy's distinct safety profile when counseling patients—a step where the evidence shows substantial difficulty. The central problem is the conflation of local low-dose vaginal estrogen with systemic estrogen therapy. Local vaginal estrogen results in minimal systemic absorption and has not been shown to increase the risk of breast cancer,[40–44] endometrial hyperplasia or cancer,[9] cardiovascular events,[45] or venous thromboembolism.[45] The class-wide boxed warning that reinforced this conflation for years was removed at the FDA's request in November 2025,[5] but this regulatory correction does not by itself resolve the clinician knowledge gap that the prior labeling helped entrench.

That gap is most pronounced in women with a history of breast cancer, a population in which up to 75% experience GSM symptoms.[46] These symptoms are frequently induced or worsened by endocrine therapy,[47] yet effective treatment is often withheld. In the WISDOM survey of 644 physicians, only 34% of obstetrician-gynecologists and 17% of primary care clinicians reported feeling comfortable prescribing vaginal estrogen to women with a personal history of breast cancer, citing concerns about estrogen exposure—despite medical society support for its use in this population when other therapies fail and when offered in consultation with oncology.[48]

Equipping clinicians to apply these distinctions and to counsel patients accurately about the differing safety profiles of local versus systemic therapy is essential to reducing inappropriate treatment avoidance and ensuring that women with GSM, including breast cancer survivors, are not denied effective therapy.

Gap #4	Educational Need	Learning Objective
Clinicians often lack the practical knowledge and applied clinical skill needed to select and prescribe hormonal therapies for GSM, based on clinical factors, individual patient presentation and preference.	There is a need for clinicians to develop the applied competence to select and tailor hormonal therapy for patients with GSM who desire hormonal therapy, based on individual patient presentations, clinical factors, comorbidities, and preferences.	At the conclusion of this activity, participants should be able to **develop an individualized hormonal treatment plan** for a patient with GSM who desires hormonal therapy—including therapy selection, formulation, route of administration, and dosing—based on her presenting symptoms, clinical history, comorbidities, and preferences.

Recognizing GSM, knowing the available therapies, and counseling accurately on their risks and benefits are necessary but not sufficient. Effective management ultimately requires the applied competence to translate that knowledge into an individualized treatment plan. For patients who desire hormonal therapy, this means selecting among local low-dose vaginal estrogen (available as creams, tablets, inserts, and rings), vaginal DHEA (prasterone), and oral ospemifene, with formulation, route, and dosing tailored to the individual.[4] Constructing an individualized plan requires a working knowledge of the FDA-approved options and their distinct dosing schedules, which range from daily self-administration to a ring replaced once every three months.

Table 1. FDA-approved Treatments for GSM

Therapy (Formulation)	**Route**	**Representative Starting Dose**	**Representative Maintenance Dose**
17β-estradiol cream (0.1 mg/g)	Vaginal	0.5–1 g daily for 2 weeks	0.5–1 g, 1–3 times per week
Conjugated estrogens cream (0.625 mg/g)	Vaginal	0.5–1 g daily for 2 weeks	0.5 g, 1–3 times per week
17β-estradiol insert (4 or 10 μg)	Vaginal	1 insert daily for 2 weeks	1 insert twice weekly
Estradiol hemihydrate tablet (4 or 10 μg)	Vaginal	1 tablet daily for 2 weeks	1 tablet twice weekly
Estradiol ring (releases ~7.5 μg/day)	Vaginal	1 ring	Replace every 3 months
Prasterone/DHEA insert (6.5 mg)	Vaginal	1 insert daily	1 insert daily
Ospemifene (60 mg)	Oral	1 tablet daily	1 tablet daily

Adapted from Kaufman MR, et al. J Urol. 2025;214(3):242-250.

Because these therapies demonstrate broadly comparable efficacy and there is insufficient evidence to favor one over another, selection depends not on a fixed hierarchy but on matching therapy characteristics to patient-specific factors.[4] Other factors, such as a history of recurrent UTI and/or concomitant urinary symptoms such as urgency/frequency, also play a role in therapeutic choice.[4] Current guidelines are explicit that formulation and route should be individualized through shared decision-making, accounting for personal preference, accessibility, and the patient's ability to use a given modality consistently. This includes taking into account manual dexterity, anatomy, and social support.[4]

The consequences of failing to individualize are evident in real-world adherence data. Persistence with local estrogen therapies is poor and varies substantially by formulation: in a US claims-based analysis, 12-month persistence ranged from 6% for estradiol vaginal cream to 44% for the estradiol vaginal ring, with ospemifene at 23%.[49] Application-related burden, including messiness, leakage, and the need for frequent self-insertion, is a recognized driver of suboptimal adherence, meaning a therapy poorly matched to a patient's preferences or physical capabilities is unlikely to deliver benefit regardless of its trial efficacy.[50–52] When clinicians default to a single familiar formulation rather than tailoring therapy, the predictable results are early discontinuation and unrelieved symptoms. Closing this gap requires building clinicians' ability to construct individualized plans by selecting therapy, formulation, route, and dosing that reflect each patient's clinical history, comorbidities, and preferences.

Conclusion and Recommendations

Taken together, the evidence identifies four interrelated gaps across the full clinical pathway for GSM: recognizing the condition, knowing the available treatment options, counseling accurately on the distinct safety profiles of each therapeutic option, and constructing individualized treatment plans for patients who desire hormonal therapy. These gaps are mutually reinforcing: a clinician who does not recognize GSM never reaches a treatment decision, and one who recognizes it but conflates local with systemic estrogen safety may unnecessarily withhold effective therapy. That these gaps are remediable through education is well supported: a multispecialty menopause curriculum delivered to family medicine, internal medicine, and obstetrics and gynecology residents significantly improved knowledge-test performance, with correct responses rising from 60.8% to 79.1%, and gains that did not differ by specialty or training year.[53]

To close these gaps, a CME activity should mirror the clinical reasoning sequence and equip clinicians to:

- Identify the signs and symptoms of GSM in perimenopausal and menopausal women to support earlier recognition and diagnosis
- Describe the nonhormonal and hormonal treatment options available for GSM
- Counsel patients on the risk-benefit and safety profiles of hormonal therapies relative to systemic estrogen, including in women with a history of breast cancer
- Individualize hormonal therapy selection through shared decision-making for patients who desire hormonal treatment

Aligning instructional content and assessment with the updated guidance and regulatory landscape will support earlier recognition, more accurate counseling, and guideline-concordant, individualized treatment, ultimately improving symptom control and quality of life for the substantial population of perimenopausal and menopausal women affected by this underdiagnosed and undertreated condition.

References

1. Portman DJ, Gass MLS, Vulvovaginal Atrophy Terminology Consensus Conference Panel. Genitourinary syndrome of menopause: new terminology for vulvovaginal atrophy from the International Society for the Study of Women's Sexual Health and the North American Menopause Society. *Menopause*. 2014;21(10):1063-1068. doi:10.1097/GME.0000000000000329

2. Cox S, Nasseri R, Rubin RS, Santiago-Lastra Y. Genitourinary Syndrome of Menopause. *Med Clin North Am*. 2023;107(2):357-369. doi:10.1016/j.mcna.2022.10.017

3. Woods NF, Shaver JF, Berg JA. Genitourinary Syndrome of Menopause: Prevalence and Predictors. *Clin Obstet Gynecol*. 2024;67(1):27-42. doi:10.1097/GRF.0000000000000847

4. Kaufman MR, Ackerman AL, Amin KA, et al. The AUA/SUFU/AUGS Guideline on Genitourinary Syndrome of Menopause. *J Urol*. 2025;214(3):242-250. doi:10.1097/JU.0000000000004589

5. Research C for DE and. FDA Requests Labeling Changes Related to Safety Information to Clarify the Benefit/Risk Considerations for Menopausal Hormone Therapies. *FDA*. Published online April 8, 2026. Accessed May 26, 2026. https://www.fda.gov/drugs/drug-alerts-and-statements/fda-requests-labeling-changes-related-safety-information-clarify-benefitrisk-considerations

6. Stephenson J. FDA orders estrogen safety warnings: agency offers guidance for HRT use. *JAMA*. 2003;289(5):537-538. doi:10.1001/jama.289.5.537

7. Mitchell CM, Larson JC, Crandall CJ, et al. Association of Vaginal Estradiol Tablet With Serum Estrogen Levels in Women Who Are Postmenopausal: Secondary Analysis of a Randomized Clinical Trial. *JAMA Netw Open*. 2022;5(11):e2241743. doi:10.1001/jamanetworkopen.2022.41743

8. Constantine GD, Simon JA, Pickar JH, et al. The REJOICE trial: a phase 3 randomized, controlled trial evaluating the safety and efficacy of a novel vaginal estradiol soft-gel capsule for symptomatic vulvar and vaginal atrophy. *Menopause*. 2017;24(4):409-416. doi:10.1097/GME.0000000000000786

9. Constantine GD, Graham S, Lapane K, et al. Endometrial safety of low-dose vaginal estrogens in menopausal women: a systematic evidence review. *Menopause*. 2019;26(7):800-807. doi:10.1097/GME.0000000000001315

10. Mili N, Paschou SA, Armeni A, Georgopoulos N, Goulis DG, Lambrinoudaki I. Genitourinary syndrome of menopause: a systematic review on prevalence and treatment. *Menopause*. 2021;28(6):706-716. doi:10.1097/GME.0000000000001752

11. Palma F, Volpe A, Villa P, Cagnacci A, Writing group of AGATA study. Vaginal atrophy of women in postmenopause. Results from a multicentric observational study: The AGATA study. *Maturitas*. 2016;83:40-44. doi:10.1016/j.maturitas.2015.09.001

12. Nappi RE, Kokot-Kierepa M. Vaginal Health: Insights, Views & Attitudes (VIVA) – results from an international survey. *Climacteric*. 2012;15(1):36-44. doi:10.3109/13697137.2011.647840

13. Palacios S. Managing urogenital atrophy. *Maturitas*. 2009;63(4):315-318. doi:10.1016/j.maturitas.2009.04.009

14. Bachmann GA, Nevadunsky NS. Diagnosis and treatment of atrophic vaginitis. *Am Fam Physician*. 2000;61(10):3090-3096.

15. Krychman M, Graham S, Bernick B, Mirkin S, Kingsberg SA. The Women's EMPOWER Survey: Women's Knowledge and Awareness of Treatment Options for Vulvar and Vaginal Atrophy Remains Inadequate. *J Sex Med*. 2017;14(3):425-433. doi:10.1016/j.jsxm.2017.01.011

16. Allen JT, Laks S, Zahler-Miller C, et al. Needs assessment of menopause education in United States obstetrics and gynecology residency training programs. *Menopause*. 2023;30(10):1002-1005. doi:10.1097/GME.0000000000002234

17. Kling JM, MacLaughlin KL, Schnatz PF, et al. Menopause Management Knowledge in Postgraduate Family Medicine, Internal Medicine, and Obstetrics and Gynecology Residents: A Cross-Sectional Survey. *Mayo Clin Proc*. 2019;94(2):242-253. doi:10.1016/j.mayocp.2018.08.033

18. Archer DF, Kimble TD, Lin FDY, Battucci S, Sniukiene V, Liu JH. A Randomized, Multicenter, Double-Blind, Study to Evaluate the Safety and Efficacy of Estradiol Vaginal Cream 0.003% in Postmenopausal Women with Vaginal Dryness as the Most Bothersome Symptom. *J Womens Health*. 2018;27(3):231-237. doi:10.1089/jwh.2017.6515

19. Bachmann G, Bouchard C, Hoppe D, et al. Efficacy and safety of low-dose regimens of conjugated estrogens cream administered vaginally. *Menopause*. 2009;16(4):719-727. doi:10.1097/gme.0b013e3181a48c4e

20. Fernandes T, Costa-Paiva LH, Pedro AO, Baccaro LFC, Pinto-Neto AM. Efficacy of vaginally applied estrogen, testosterone, or polyacrylic acid on vaginal atrophy: a randomized controlled trial. *Menopause*. 2016;23(7):792-798. doi:10.1097/GME.0000000000000613

21. Freedman M, Kaunitz AM, Reape KZ, Hait H, Shu H. Twice-weekly synthetic conjugated estrogens vaginal cream for the treatment of vaginal atrophy. *Menopause*. 2009;16(4):735-741. doi:10.1097/gme.0b013e318199e734

22. Lima SMRR, Yamada SS, Reis BF, Postigo S, Galvão da Silva MAL, Aoki T. Effective treatment of vaginal atrophy with isoflavone vaginal gel. *Maturitas*. 2013;74(3):252-258. doi:10.1016/j.maturitas.2012.11.012

23. Mitchell CM, Reed SD, Diem S, et al. Efficacy of Vaginal Estradiol or Vaginal Moisturizer vs Placebo for Treating Postmenopausal Vulvovaginal Symptoms: A Randomized Clinical Trial. *JAMA Intern Med*. 2018;178(5):681-690. doi:10.1001/jamainternmed.2018.0116

24. Eriksen B. A randomized, open, parallel-group study on the preventive effect of an estradiol-releasing vaginal ring (Estring) on recurrent urinary tract infections in postmenopausal women. *Am J Obstet Gynecol*. 1999;180(5):1072-1079. doi:10.1016/s0002-9378(99)70597-1

25. Archer DF, Labrie F, Bouchard C, et al. Treatment of pain at sexual activity (dyspareunia) with intravaginal dehydroepiandrosterone (prasterone). *Menopause*. 2015;22(9):950-963. doi:10.1097/GME.0000000000000428

26. Barton DL, Sloan JA, Shuster LT, et al. Evaluating the efficacy of vaginal dehydroepiandosterone for vaginal symptoms in postmenopausal cancer survivors: NCCTG N10C1 (Alliance). *Support Care Cancer Off J Multinatl Assoc Support Care Cancer*. 2018;26(2):643-650. doi:10.1007/s00520-017-3878-2

27. Labrie F, Archer DF, Koltun W, et al. Efficacy of intravaginal dehydroepiandrosterone (DHEA) on moderate to severe dyspareunia and vaginal dryness, symptoms of vulvovaginal atrophy, and of the genitourinary syndrome of menopause. *Menopause*. 2018;25(11):1339-1353. doi:10.1097/GME.0000000000001238

28. Lee YK, Chung HH, Kim JW, Park NH, Song YS, Kang SB. Vaginal pH-balanced gel for the control of atrophic vaginitis among breast cancer survivors: a randomized controlled trial. *Obstet Gynecol*. 2011;117(4):922-927. doi:10.1097/AOG.0b013e3182118790

29. Nappi RE, Kotek M, Breštánský A, Giordan N, Beriotto I, Tramentozzi E. Treatment of vulvo-vaginal atrophy with hyaluronate-based gel: a randomized controlled study. *Minerva Obstet Gynecol*. 2022;74(6):480-488. doi:10.23736/S2724-606X.21.04841-7

30. Anger J, Lee U, Ackerman AL, et al. Recurrent Uncomplicated Urinary Tract Infections in Women: AUA/CUA/SUFU Guideline. *J Urol*. 2019;202(2):282-289. doi:10.1097/JU.0000000000000296

31. Lethaby A, Ayeleke RO, Roberts H. Local oestrogen for vaginal atrophy in postmenopausal women. *Cochrane Database Syst Rev*. 2016;2016(8):CD001500. doi:10.1002/14651858.CD001500.pub3

32. Nappi RE, Davis SR. The use of hormone therapy for the maintenance of urogynecological and sexual health post WHI. *Climacteric J Int Menopause Soc*. 2012;15(3):267-274. doi:10.3109/13697137.2012.657589

33. Rahn DD, Carberry C, Sanses TV, et al. Vaginal estrogen for genitourinary syndrome of menopause: a systematic review. *Obstet Gynecol*. 2014;124(6):1147-1156. doi:10.1097/AOG.0000000000000526

34. "The 2022 Hormone Therapy Position Statement of The North American Menopause Society" Advisory Panel. The 2022 hormone therapy position statement of The North American Menopause Society. *Menopause*. 2022;29(7):767-794. doi:10.1097/GME.0000000000002028

35. Raz R, Stamm WE. A controlled trial of intravaginal estriol in postmenopausal women with recurrent urinary tract infections. *N Engl J Med*. 1993;329(11):753-756. doi:10.1056/NEJM199309093291102

36. Labrie F, Archer D, Bouchard C, et al. Intravaginal dehydroepiandrosterone (Prasterone), a physiological and highly efficient treatment of vaginal atrophy. *Menopause*. 2009;16(5):907-922. doi:10.1097/gme.0b013e31819e8e2d

37. Portman D, Palacios S, Nappi RE, Mueck AO. Ospemifene, a non-oestrogen selective oestrogen receptor modulator for the treatment of vaginal dryness associated with postmenopausal vulvar and vaginal atrophy: a randomised, placebo-controlled, phase III trial. *Maturitas*. 2014;78(2):91-98. doi:10.1016/j.maturitas.2014.02.015

38. Kingsberg SA, Krychman M, Graham S, Bernick B, Mirkin S. The Women's EMPOWER Survey: Identifying Women's Perceptions on Vulvar and Vaginal Atrophy and Its Treatment. *J Sex Med*. 2017;14(3):413-424. doi:10.1016/j.jsxm.2017.01.010

39. Funnell EL, McConnell F, Martin-Key NA, Qian L, Babbitt K, Bahn S. Understanding Experiences of and Unmet Needs in Online Searches for Menopause Information: An Exploratory Survey. *JMIR Form Res*. 2025;9:e75335. doi:10.2196/75335

40. Agrawal P, Singh SM, Able C, et al. Safety of Vaginal Estrogen Therapy for Genitourinary Syndrome of Menopause in Women With a History of Breast Cancer. *Obstet Gynecol*. 2023;142(3):660-668. doi:10.1097/AOG.0000000000005294

41. Cold S, Cold F, Jensen MB, Cronin-Fenton D, Christiansen P, Ejlertsen B. Systemic or Vaginal Hormone Therapy After Early Breast Cancer: A Danish Observational Cohort Study. *J Natl Cancer Inst*. 2022;114(10):1347-1354. doi:10.1093/jnci/djac112

42. Hussain I, Talaulikar VS. A systematic review of randomised clinical trials - The safety of vaginal hormones and selective estrogen receptor modulators for the treatment of genitourinary menopausal symptoms in breast cancer survivors. *Post Reprod Health*. 2023;29(4):222-231. doi:10.1177/20533691231208473

43. Le Ray I, Dell'Aniello S, Bonnetain F, Azoulay L, Suissa S. Local estrogen therapy and risk of breast cancer recurrence among hormone-treated patients: a nested case-control study. *Breast Cancer Res Treat*. 2012;135(2):603-609. doi:10.1007/s10549-012-2198-y

44. McVicker L, Labeit AM, Coupland CAC, et al. Vaginal Estrogen Therapy Use and Survival in Females With Breast Cancer. *JAMA Oncol*. 2024;10(1):103-108. doi:10.1001/jamaoncol.2023.4508

45. Crandall CJ, Hovey KM, Andrews CA, et al. Breast cancer, endometrial cancer, and cardiovascular events in participants who used vaginal estrogen in the Women's Health Initiative Observational Study. *Menopause*. 2018;25(1):11-20. doi:10.1097/GME.0000000000000956

46. Mazzarello S, Hutton B, Ibrahim MFK, et al. Management of urogenital atrophy in breast cancer patients: a systematic review of available evidence from randomized trials. *Breast Cancer Res Treat*. 2015;152(1):1-8. doi:10.1007/s10549-015-3434-z

47. Fallowfield L, Cella D, Cuzick J, Francis S, Locker G, Howell A. Quality of life of postmenopausal women in the Arimidex, Tamoxifen, Alone or in Combination (ATAC) Adjuvant Breast Cancer Trial. *J Clin Oncol Off J Am Soc Clin Oncol*. 2004;22(21):4261-4271. doi:10.1200/JCO.2004.08.029

48. Kingsberg SA, Larkin L, Krychman M, Parish SJ, Bernick B, Mirkin S. WISDOM survey: attitudes and behaviors of physicians toward vulvar and vaginal atrophy (VVA) treatment in women including those with breast cancer history. *Menopause*. 2019;26(2):124-131. doi:10.1097/GME.0000000000001194

49. Faught BM, Soulban G, Yeaw J, et al. Ospemifene versus local estrogen: adherence and costs in postmenopausal dyspareunia. *J Comp Eff Res*. 2019;8(13):1111-1123. doi:10.2217/cer-2019-0091

50. Management of symptomatic vulvovaginal atrophy: 2013 position statement of The North American Menopause Society. *Menopause*. 2013;20(9):888-902; quiz 903-904. doi:10.1097/GME.0b013e3182a122c2

51. Minkin MJ, Maamari R, Reiter S. Improved compliance and patient satisfaction with estradiol vaginal tablets in postmenopausal women previously treated with another local estrogen therapy. *Int J Womens Health*. 2013;5:133-139. doi:10.2147/IJWH.S41897

52. Mattsson LÅ, Ericsson Å, Bøgelund M, Maamari R. Women's preferences toward attributes of local estrogen therapy for the treatment of vaginal atrophy. *Maturitas*. 2013;74(3):259-263. doi:10.1016/j.maturitas.2012.12.004

53. Vesco KK, Brooks NB, Francisco MC, et al. Resident training to optimize patient-focused menopause management: a multispecialty menopause curriculum to enhance knowledge and preparedness. *Menopause*. 2024;31(2):93-100. doi:10.1097/GME.0000000000002291